

Contents

Special Issue

Conformational Studies of Carbohydrates

Edited by E.F. Hounsell and M. Ragazzi (Guest Editor)

M. Ragazzi (Milan, Italy)	v	Guest Editor Introduction
J. Carver (Toronto, Canada)	vii	Graphical Abstracts
A. Poveda, J.L. Asensio, M. Martín-Pastor and J. Jiménez-Barbero (Madrid, Spain)	1	Three-dimensional structures of carbohydrates and how they interact with proteins (from a transcript of the opening comments)
E. Monteagudo, A. Madami, F. Animati, P. Lombardi and F. Arcamone (Pomezia, Rome, Italy)	3	Solution conformation and dynamics of a tetrasaccharide related to the Lewis ^X antigen deduced by ¹ H NMR NOESY, ROESY, and T-ROESY measurements
K. Ogawa (Osaka, Japan)	11	Conformational analysis of 4-demethoxy-7-O-[2,6-dideoxy-4-O-(2,3,6-trideoxy-3-amino- α -L-lyxo-hexopyranosyl)- α -L-lyxo-hexopyranosyl]adriamycinone, the first doxorubicin disaccharide analogue to be reported
L. Catoire, C. Derouet, A.-M. Redon, R. Goldberg and C. Hervé du Penhoat (Paris, France)	17	Progress in structure analyses on carbohydrates and polysaccharides
N.C. Santos, A.M.A. Sousa (Lisboa, Portugal), D. Betheder (Lahèze, France), M. Prieto and M.A.R.B. Castanho (Lisboa, Portugal)	19	An NMR study of the dynamic single-stranded conformation of sodium pectate
K. Ogawa (Osaka, Japan), T. Yui (Miyazaki, Japan), K. Nakata (Osaka, Japan), M. Kakuta and A. Misisaki (Kobe, Japan)	31	Structural characterization of organized systems of polysaccharides and phospholipids by light scattering spectroscopy and electron microscopy
E.F. Hounsell (London, UK)	41	X-ray study of beijerin sodium salts, a new galacturonic acid-containing exo-polysaccharide
B. Hardy (Oxford, UK)	47	Glycosylation targets for drug design
E.R. Caffarena and J.R. Grigera (La Plata, Argentina)	49	Current topics in carbohydrate modelling: diverse questions, diverse methods
S. Abbate, L. Biancardi, G. Longhi (Brescia, Italy) and G. Conti (Novara, Italy)	51	Glass transition in aqueous solutions of glucose. Molecular dynamics simulation
D.A. Brant (Irvine, CA, USA)	59	Study of the phase space structure for a two-degrees of freedom model of a symmetric glycosidic linkage
M. Hricovini, M. Guerrini, G. Torri and B. Casu (Milan, Italy)	67	Polysaccharide and oligosaccharide flexibility
G. Paradossi, F. Cavalieri and V. Crescenzi (Rome, Italy)	69	Motional properties of <i>E. Coli</i> polysaccharide K5 in aqueous solution analyzed by NMR relaxation measurements
B. Manunza, S. Deiana, M. Pintore (Sassari, Italy) and C. Gessa (Bologna, Italy)	77	¹ H NMR relaxation study of a chitosan-cyclodextrin network
	85	Molecular dynamics study of polygalacturonic acid chains in aqueous solution

B. Manunza, S. Deiana, M. Pintore, G. Delogu (Sassari, Italy) and C. Gessa (Bologna, Italy)

89 A molecular modeling study on the interaction between β -cyclodextrin and synthetic pyretroids

I Announcement

iii Graphical Abstracts

Regular Papers

A. Rydlund (Stockholm, Västerås, Sweden) and O. Dahlman (Stockholm, Sweden)

I. Redmann, M. Pina, B. Guyot (Montpellier, France), P. Blaise, M. Farines (Perpignan, France) and J. Graillle (Montpellier, France)

J. Cai, B.E. Davison, C.R. Ganellin (London, UK), S. Thaisrivongs (Kalamazoo, MI, USA) and K.S. Wibley (London, UK)

J. Gervay, T.N. Nguyen and M.J. Hadd (Tucson, AZ, USA)

P.B. van Seeventer (Utrecht, The Netherlands), J. Kerékgyártó (Utrecht, The Netherlands; Debrecen, Hungary), J.A.L.M. van Dorst, K.M. Halkes, J.P. Kamerling and J.F.G. Vliegenthart (Utrecht, The Netherlands)

V. Bouchez, I. Stasik, D. Beaupère and R. Uzan (Amiens, France)

U. Zähringer (Borstel, Germany), H. Rettenmaier (Ludwigshafen, Germany), H. Moll (Borstel, Germany), S.N. Senchenkova (Moscow, Russian Federation) and Yu.A. Knirel (Borstel, Germany; Moscow, Russian Federation)

B. Evers (Hamburg, Germany), M. Petříček (Prague, Czech Republic) and J. Thiem (Hamburg, Germany)

A. Lubineau, K. Basset-Carpentier and C. Augé (Orsay, France)

103 Chemoenzymatic synthesis of glucose fatty esters

109 Potential HIV protease inhibitors: Preparation of di-N-alkylated 2-, 6-, and 2,6-amino-deoxy-derivatives of D-glucose by direct displacement and by a novel reductive-alkylation procedure

119 Mechanistic studies on the stereoselective formation of glycosyl iodides: first characterization of β -D-glycosyl iodides

127 Chemical and chemo-enzymatic synthesis of the α -Neu *p*5Ac-(2 \rightarrow 6)- β -D-GalpNAc-(1 \rightarrow 4)- β -D-GlcNAc-(1 \rightarrow 2)- α -D-Manp element that is part of N-linked carbohydrate chains of human lutropin

139 Regioselective halogenation of pentono-1,4-lactones. Efficient synthesis of 5-chloro- and 5-bromo-5-deoxy derivatives

143 Structure of a new 6-deoxy- α -D-talan from *Burkholderia (Pseudomonas) plantarii* strain DSM 6535, which is different from the O-chain of the lipopolysaccharide

153 Specificity of amylases and cyclodextrin-glucanotransferase in reactions with 2-deoxy-maltooligosaccharides

161 Porcine liver (2 \rightarrow 3)- α -sialyltransferase: substrate specificity studies and application of the immobilized enzyme to the synthesis of various sialylated oligosaccharide sequences

Notes

C.P.J. Glaudemans, C.E. Miller and E.M. Nashed (Bethesda, MD, USA)

W.-Y. Wu, B. Jin, D.C.M. Kong and M. von Itzstein (Parkville, Australia)

A. Morère, C. Menut, C. Vidil, P. Skaanderup, J. Thorsen, J.-P. Roque and J.-L. Montero (Montpellier, France)

A. Oosterveld (Wageningen, The Netherlands), J.H. Grabber (Madison, WI, USA), G. Beldman (Wageningen, The Netherlands), J. Ralph (Madison, WI, USA) and A.G.J. Voragen (Wageningen, The Netherlands)

Z.G. Tóth, I.F. Pelyvás, C. Szegedi, P. Benke, E. Magyar, T. Miklovicz, G. Batta and F. Szaricskai (Debrecen, Hungary)

169 The measurement of affinity between ligand and antibody using ligand-induced antibody fluorescence change

171 A facile synthesis of a useful 5-N-substituted-3,5-dideoxy-D-glycero-D-galacto-2-nonulosonic acid from 2-acetamido-2-deoxy-D-glucose

175 The benzyloxycarbonyl group: An alternative protective group in the mannose series

179 Formation of ferulic acid dehydrodimers through oxidative cross-linking of sugar beet pectin

183 Synthesis of new anhydro and branched-chain cyclitols

C. Karlsson, P.-E. Jansson (Huddinge, Sweden) and R. Wollin (Stockholm, Sweden) 191 Structure of the O-polysaccharide from the LPS of a *Hafnia alvei* strain isolated from a patient with suspect yersiniosis

iii Graphical Abstracts

Regular Papers

W.S. York, S. Hantus, P. Albersheim and A.G. Darvill (Athens, GA, USA) 199 Determination of the absolute configuration of monosaccharides by ^1H NMR spectroscopy of their per- O -(*S*)-2-methylbutyrate derivatives

H. Ando, H. Ishida, M. Kiso and A. Hasegawa (Gifu, Japan) 207 A synthetic approach to the c-series gangliosides containing sialyl- α (2 \rightarrow 8)sialyl- α (2 \rightarrow 8)sialic acid: Synthesis of ganglioside GT4, α (2 \rightarrow 6)GT4 and GT3

J.-I. Jane, K.-s. Wong and A.E. McPherson (Ames, IA, USA) 219 Branch-structure difference in starches of A- and B-type X-ray patterns revealed by their Naegeli dextrins

R. Panikkar and D.J. Brasch (Dunedin, New Zealand) 229 Biosynthetic implications of NMR analyses of alginate homo- and heteropolymers from New Zealand brown seaweeds

K.-S. Shin, H. Kiyohara, T. Matsumoto and H. Yamada (Tokyo, Japan) 239 Rhamnogalacturonan II from the leaves of *Panax ginseng* C.A. Meyer as a macrophage Fc receptor expression-enhancing polysaccharide

A.E. Frankel, T. Fu, C. Burbage, E. Tagge, B. Harris, J. Vesely and M.C. Willingham (Charleston, SC, USA) 251 Lectin-deficient ricin toxin intoxicates cells bearing the D-mannose receptor

Y. Kameda, K. Kawashima, M. Takeuchi, K. Ikeda, N. Asano and K. Matsui (Kanazawa city, Japan) 259 Preparation and biological activity of manno- and galacto-validamines, new 5a-carba-glycosamines as α -glycosidase inhibitors

Notes

U. Büttner, F. Gerum and T. Severin (München, Germany) 265 Formation of α -amino-acid amides and α -hydroxy-acid amides by degradation of sugars with primary amines

V. Moreau, J.Chr. Norrild and H. Driguez (Grenoble, France) 271 Synthesis of methyl 4-thio- β -cellobioside. A reinvestigation

S.J. Angyal (Sydney, Australia) 279 A short note on the epimerization of aldoses

Y. Nishiyama, N. Nishimura, N. Kuroyanagi and I. Maeha (Nagoya, Japan) 283 Synthesis of 3- β -D-ribofuranosyl-1*H*-pyrazole-4-carboxamide

iii Graphical Abstracts

Regular Papers

D. Bailey, M.J. Davies, F.H. Routier, C. Bauer, J. Feeney and E.F. Hounsell (London, UK) 289 ^1H NMR analysis of novel sialylated and fucosylated lactose-based oligosaccharides having linear GlcNAc β 1-6)Gal and Neu5Ac α 2-6)GlcNAc sequences

J.S. Kozlowski, C.H. Marzabadi, N.P. Rath and C.D. Spilling (St. Louis, MO, USA) 301 Chemistry of glucal halohydrins (II): An unusual protecting group effect in the competitive formation of formyl furanosides and methyl glycosides

P.A.S. Mourão, M.S.G. Pavão (Rio de Janeiro, Brazil), B. Mulloy (Potters Bar, UK) and R. Wait (Salisbury, UK) 315 Chondroitin ABC lyase digestion of an ascidian dermatan sulfate. Occurrence of unusual 6-*O*-sulfo-2-acetamido-2-deoxy-3-*O*-(2-*O*-sulfo- α -L-idopyranosyluronic acid)- β -D-galactose units

S.F. Osman, W.F. Fett, P. Irwin (Wyndmoor, PA, USA), P. Cescutti (Trieste, Italy), J.N. Brouillet and J.V. O'Connor (Wyndmoor, PA, USA) 323 The structure of the exopolysaccharide of *Pseudomonas fluorescens* strain H13

J. Zhang and P. Kováč (Bethesda, MD, USA) 329 Synthesis of methyl α -glycosides of some higher oligosaccharide fragments of the O-antigen of *Vibrio cholerae* O1, serotype Inaba and Ogawa

J.-N. Bertho (Rennes, France), A. Coué, D.F. Ewing, J.W. Goodby, P. Letellier, G. Mackenzie (Hull, UK) and D. Plusquellec (Rennes, France) 341 Novel sugar bola-amphiphiles with a pseudo macrocyclic structure

Notes

W. Liao and D. Lu (Beijing, PR China)	347	Convergent synthesis of an octasaccharide acceptor corresponding to the reducing terminus of mycobacterial 3- <i>O</i> -methylmannose polysaccharide (MMP)
P.A. Kroon, M.T. Garcia Conesa, I.J. Colquhoun and G. Williamson (Norwich, UK)	351	Process for the isolation of preparative quantities of [2- <i>O</i> -(<i>trans</i> -feruloyl)- α -L-arabinofuranosyl]- $\{1 \rightarrow 5\}$ -L-arabinofuranose from sugarbeet
J. Ning and F. Kong (Beijing, PR China)	355	Synthesis and glycosidic coupling reaction of substituted 2,6-dioxabicyclo[3.1.0]hexanes: 1,2-anhydro-3,5-di- <i>O</i> -benzyl- α -D-ribofuranose
J. Jindrich (Praha, Czech Republic), K. Harata (Ibaraki, Japan), B. Lindberg, J. Pitha and P. Sefers (Stockholm, Sweden)	361	Synthesis of 2 ¹ ,3 ¹ - <i>O</i> -(propane-1,2-diyl)- and 2 ¹ ,3 ¹ - <i>O</i> -(3-hydroxypropane-1,2-diyl)-cyclomaltoheptaose
J.O. Hoberg (Golden, CO, USA)	365	Synthesis and chemistry of 4,6- <i>O</i> -di-(<i>tert</i> -butyl)silanediyl-D-glucal
P.B. van Seeventer, J.A.L.M. van Dorst, J.F. Siemerink, J.P. Kamerling and J.F.G. Vliegenthart (Utrecht, The Netherlands)	369	Thiol addition to protected allyl glycosides: an improved method for the preparation of spacer-arm glycosides
R.R. Diaz, C.R. Melgarejo, I.I. Cubero and M.T. Plaza López-Espinosa (Granada, Spain)	375	Synthesis of furanose glycals from furanose 1,2-diols and their cyclic thiocarbonate esters
	III	Author index
	V	Subject index
	XI	Contents

